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SB SAT @ AMSAT $ANS-271.01
ARIANE 502 LAUNCH DELAYED

HR AMSAT NEWS SERVICE BULLETIN 271.01 FROM AMSAT HQ
SILVER SPRING, MD, SEPTEMBER 28,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-271.01

By a press release, September 24, ESA and the French space agency, CNES announced that the flight test of the second Ariane 5 vehicle would be delayed until mid-October.

The following is the exact wording of the ESA/CNES release:

JOINT ESA/CNES PRESS RELEASE

Nr. 30-97 Paris, 24 September 1997

Ariane 502, final steps before launch

The verification process relating to analysis of the launcher's control loop (see ESA/CNES joint press release of 17 September) has taken longer than expected. Moreover, final qualification of the flight program software will require two additional weeks to complete. For these reasons, the launch campaign for the second Ariane-5 qualification flight at Europe's spaceport in Kourou, French Guiana, is being put on hold from 26 September, aiming at a launch on 15 October 1997 at the earliest. The campaign will be resumed seven days before launch, with the filling of the upper stage.

The Launcher Countdown Rehearsal performed in Kourou earlier in September gave good results. Meanwhile, the qualification process continued in Europe, where computer programs that simulate the real flight conditions of Ariane 502 indicated a risk of oscillation that could increase the consumption of the oil that feeds the displacing actuators used to steer the main engine.

To lower the risk of unwanted oscillations on this specific flight, two activities are being conducted in parallel:
a: verification of the validity of the data used in the mathematical model that simulates flight
b: introduction of a corrective measure using a filter to eliminate unwanted oscillations.

Incorporating this filter, contained in an electronic box fitted in the main stage, would entail additional qualification tests that would put the target launch date back by a further one or two weeks.

The choice of course of action and a decision on a new target date for the second test flight of Ariane 5 are expected to be confirmed early in October.

End of ESA/CNES press release.

Some have asked if this delay means that Phase 3D may yet fly on Ariane 502. The answer to this is a definite NO. The 502 launch vehicle is already assembled on the pad at Kourou and there is no chance that Phase 3D can be accommodated on it.

Negotiations are proceeding between Phase 3D Project Leader Dr. Karl Meinzer DJ4ZC of AMSAT-DL and various parties in Europe concerning another launch opportunity for the satellite. It is not expected that any word on this will be forthcoming until after the launch of A-502. Although Phase 3D will not be aboard A-502, all in the amateur satellite community should be hoping for a very successful flight. The Ariane 5 program is important to ESA, and offers many potential future launch opportunities for amateur spacecraft.

Keep tuned to ANS for further information.

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SB SAT @ AMSAT $ANS-271.02
DAVID WOLF, KC5VPF, ON MIR

HR AMSAT NEWS SERVICE BULLETIN 271.02 FROM AMSAT HQ
SILVER SPRING, MD, SEPTEMBER 28,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-271.02

Ham radio aboard MIR will continue at least for another four months. US astronaut David Wolf, KC5VPF, will get to replace his colleague Mike Foale, KB5UAC, aboard the Russian space station. Under intense political pressure to consider discontinuing the presence of US astronauts aboard the ailing and aging space station, NASA Administrator Dan Goldin gave the okay September 25 for Wolf's MIR stay. Approval came only hours before the shuttle Atlantis was to be launched from Cape Canaveral on mission STS-86 and a rendezvous with MIR. Wolf will continue the permanent US presence on the station that began in 1996 with Shannon Lucid.

Goldin cited separate scientific reviews of the situation aboard MIR in his decision to deliver Wolf to MIR as originally planned. ''We move forward not only because it is safe, but for the important scientific and human experience we can gain only from MIR,'' Goldin said. He added that, as NASA looks toward next June's launch of the first element of the International Space Station, ''nothing can beat the hands-on, real-time training aboard MIR.''

Early this year, a fire broke out aboard MIR. The spacecraft also has had various mechanical problems, including malfunctions of its oxygen-generating and carbon dioxide scrubbing systems. In late June, a collision with an unmanned Progress supply rocket during a docking maneuver damaged the spacecraft's Spektr module and disrupted scientific research. Among subsequent problems, MIR has suffered from repeated computer system failures, including a failure earlier this week. The Atlantis is to carry a new computer to MIR.

Wolf, 41, is both an electrical engineer and a medical doctor. A native of Indianapolis, Wolf is single. He has been an astronaut since 1990 and served as a mission specialist aboard the shuttle Columbia in late 1993.

[ANS thanks the ARRL fore this information.]

/EX

SB SAT @ AMSAT $ANS-271.03
ASUSat

HR AMSAT NEWS SERVICE BULLETIN 271.03 FROM AMSAT HQ
SILVER SPRING, MD, SEPTEMBER 28,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-271.03

ASUSat which is now in the integration phase will be an easysat.
It will have an FM repeater which is hoped will be as good as the one on
AO-27. The FM repeater will have an uplink in the VHF band, 145.990 MHz,
and a downlink in the UHF band, 436.700 MHz. The difference between the
AO-27 and the ASUSat is that the repeater will be PL operated so the
Transmitter will go on the air only if a user wants to access it using a
PL. This enables ASUSat to improve its power budget, and make the
transmitter a bit stronger then AO-27's.

In addition the ASUSat team will be able to make their digital comm system
available to the general public. ASUSat does not have Pacsat type
application on board, as ASUSat does not have a Ram-Disk. The ASUSat team
is considering new experiments, such as an APRS store/dump digital
repeater (9600 FSK). Right now the ASUSat team does not have a launch
scheduled, but they have a good chance of getting a lift from their
sponsors at OSC in mid 1998.

[ANS thanks Assi Friedman, 4Z7ABA/KC7WSZ, of Arizona State University
for this news.]

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SB SAT @ AMSAT $ANS-271.04
MIREX 70CM SURVEY

HR AMSAT NEWS SERVICE BULLETIN 271.04 FROM AMSAT HQ
SILVER SPRING, MD, SEPTEMBER 28,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-271.04

The MIREX team would like stations who have worked it MIR PMS system on
70cm to help them collect data on experiences with working the 70cm
PMS station (Sept 8 - 28, 1997).

MIREX Survey form:

Name
Call
State
Country
Email address
Packet address

Station for 2-meters
Transceiver
Channel Step size
Preamp
Antenna
ERP

Station for 70cm
Transceiver
Channel Step size
Preamp
Antenna

ERP

Modem type
Max Packet Modem speed
Does your radio station currently support 9600 baud Modems

Have you worked MIR on packet.
How many times per month average

Which frequencies did you use:
Success rate:
1. Almost impossible to connect or transfer data
2. Could connect and transfer data sometimes
3. Good reliable connects, easy to transfer data

Frequency Success rate Comments:
145.550

145.800 - 145.200

145.985

437.650

Do you compensate for Doppler when using 2-meters

Do you compensate for Doppler when using 70cm

What type of experiments would you like to see on ISS

QRM: Besides the normal QRM associated with other stations trying to
connect to the MIR PMS.

What types of QRM do you receive while working MIR and on which frequency
(Commercial traffic, Repeaters etc.).

What is the name and mode of your first Amateur Radio Satellite

Comments and observations should be directed to Dr. Dave Larsen, N6CO at:

doc@volcano.net (Internet) -or- n6co@n0ary.ca (Packet)

[ANS thanks Miles Mann, WF1F, of the MIREX team for this report.]

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SB SAT @ AMSAT $ANS-271.05
RS-12 IN MODE A

HR AMSAT NEWS SERVICE BULLETIN 271.05 FROM AMSAT HQ
SILVER SPRING, MD, SEPTEMBER 28,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-271.05

Bob Dannals, W2GG, reports via DX PacketCluster that the RS-12
transponder is now operating in Mode A, uplink 145.910-950,
downlink 29.410-450. Modes K and T are not operational,
he reports. Roy Soifer, W2RS, told ANS that excellent signals were received
using Mode A This is the message that was on the Beacon , during the 06:09z
pass on September 27.
CQ CQ CQ DE RS12 RX 21 RX145 TX 29 MHZ"

Despite what the CW beacon says, W2GG and W2RS have been unable to access

RS-12 through the 21 MHz uplink. The 145 MHz uplink, however, works very
well.

[ANS thanks Roy Soifer, W2RS, and Bob Dannals, W2GG, for this story.]

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SB SAT @ AMSAT $ANS-271.06
WEEKLY SATELLITE REPORT PT 1

HR AMSAT NEWS SERVICE BULLETIN 271.06 FROM AMSAT HQ
SILVER SPRING, MD, SEPTEMBER 28,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-271.06

MIR
(Simplex 437.650 MHz. FM voice and packet.)
MIREX will be running the test from September 6, until September 28 1997
world wide. After the completion of the test, they will switch the MIR PMS
frequency back to the 2-meter frequency on September 29th.
See ANS Bulletin ANS-250.02 for more information. Test frequency is
437.650 MHz.
(Simplex 145.985 MHz, FM) after September 29th..

SAFEX, MIR 70 cm Repeater
(Uplink 435.750 MHz FM, Downlink 437.950 MHz FM,
Subaudible tone 141.3 Hz)
Not operational at this time.

RS-10
(Uplink 145.865-145.905 MHz CW/SSB, Downlink 29.36-29.4 MHz CW/SSB)
RS-10 Still silent.

RS-12
(Uplink, 145.91-145.95 MHz CW/SSB, Downlink 29.41-29.45 MHz .)
Operational, now in mode A.

RS-15
(Uplink 145.858-145.898 MHz CW/SSB, Downlink 29.354-29.394 MHz CW/SSB)
Operational.
(Hint: If SSB doesn't work for you, try CW. CW is very easy
to hear on the downlink!)

RS-16
Transponder information on RS-16.
Uplink = 145.915 - 145.948 MHz
Downlink = 29.415 - 29.448 MHz
Beacons = 29.408 , 29.451 MHz
Pwr 29 MHz Down = 1.2 W /4 W

Beacon 1 = 435.504 MHz
Beacon 2 = 435.548 MHz
Pwr 435 MHz Beacons = 1.6 W

FO-20
(Uplink 145.9-146.0 MHz CW/LSB, Downlink 435.8-435.9
MHz CW/USB)
Operational. FO-20 in mode JA continuously.
[ANS thanks Kazu Sakamoto, JJ1WTK, for this report.]

KO-23
(Uplink 145.85, 145.9 MHz FM, Downlink 435.175 MHz FM,
9600 Baud FSK.)
KO-23's download efficiency is way down. A quick look

at one of my programs shows that KO-23's orbit is once again in full sunlight and eclipses won't begin again until October 8th. The recurring problem of heat-induced signal distortion has returned for a bit.
[ANS thanks Stacey Mills, W4SM and Jim Weisenberger, AA7KC, for this report.]

KO-25
(Uplink 145.980 MHz FM, Downlink 436.5 MHz FM, 9600 Baud FSK.)
KO-25 operating normally
[ANS thanks Jim Weisenberger, AA7KC, for his reports on KO-25.]

AO-27
(Uplink 145.85 MHz FM, Downlink:
436.792 MHz FM (As of April 1, 1997)
The AO-27 Control team has turned AO-27 to digital Telemetry gathering mode until Saturday 1997-Oct-4. During this time the Analog Repeater will not be available for use. The AO-27 Control team asks that Amateurs do not try to transmit to AO-27 during this Time. The time spent this week gathering Telemetry will ensure a long life for AO-27..

If you have a AFSK TNC, the AO-27 command team asks that you set it up to listen to AO-27 this week and if you can save a KISS log (best way is to download AO27TLM from amsat) you can e-mail the log to N4USI@amsat.org. Any data collected will be helpful to use in determining the health of the satellite. West coast and not US stations will be most helpful.

This week marks the 4th Year AO-27 has been in orbit. Happy Birthday and Long live A0-27.
[ANS thanks Michael Wyrick, N4USI, AO-27 Control-op, for this update.]

FO-29
Voice/CW Mode JA
(Uplink 145.9-146.0 MHz CW/LSB, Downlink 435.8-435.9 MHz CW/USB)
Digital Mode JD
(Uplink 145.85, 145.87, 145.910 MHz FM, Downlink 435.910 MHz FM 9600 baud BPSK)
Operational.
The latest FO-29 Schedule.
Sept 26 (Fri) 08:09z JA
[ANS thanks Kazu Sakamoto, JJ1WTK, for this report.]

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SB SAT @ AMSAT $ANS-271.07
WEEKLY SATELLITE REPORT PT 2

HR AMSAT NEWS SERVICE BULLETIN 271.07 FROM AMSAT HQ
SILVER SPRING, MD, SEPTEMBER 28,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-271.07

AO-10
(Uplink 435.030-435.18 MHz CW/LSB, Downlink 145.975-145.825 MHz CW/USB)
Operational, Some FM'ing has been reported during the past week.
AO-10 IS spinning very slowly. Drag doesn't slow down its rotation, but magnetic damping around perigee does. It may well be wobbling a bit, since its nutation dampers probably don't work very well at this slow spin rate (about 1.5 RPM or so). However, Stacey Mills, W4SM, wouldn't describe its motion as TUMBLING. If it were tumbling, solar illumination would be truly chaotic and the transponder activity would come and go in a nearly random fashion. There would be no twice yearly periods of good/bad AO-10

transponder/beacon function as there now are. So the majority of AO-10's motion must continue to be around the Z-axis which remains relatively stable in its orientation (see Web page below for some caveats regarding possible movement of AO-10's Z-axis orientation in the last year).

The QSB is mainly experienced during periods of high (90 deg) squint, when the omni antenna is routinely masked and unmasked by the three lobes of the space frame. During these times, for reasons that aren't entirely clear, switching polarization improves the downlink signal.
See: http://www.cstone.net/~w4sm/AO-10.html
for more info.
[ANS thanks Stacey Mills, W4SM, for this report.]

OSCAR-11
(Downlink 145.825 MHz. FM, 1200 Baud PSK. Beacon 2401.500 MHz..)
Operating normally. OSCAR-11 REPORT 14 September 1997
During the period 19 August to 13 September excellent signals have once again been received from the 145.826 MHz beacon. Telemetry nominal. The battery voltage has been maintained in the range 13.9 to 14.4 volts. The internal temperatures are slowly increasing from the minimum values observed at the end of June (battery -0.4C, telemetry electronics -1.6 C). The battery temperature is now 8.4C, and telemetry electronics 6.8C. The increased temperature is due to a reduction in solar eclipse times, which is expected to continue into October.

The WOD survey of channels 10, 20, 30, 40 (+Y, -X, +X array currents, array voltage) dated 25 June was transmitted until the end of August. The timing of this WOD coincided with the maximum eclipse times. This WOD is now available from my web site (details below). At the end of August a further survey of the same channels was taken, dated 26 August. This was quickly followed by channels 21, 31, 41, 51 (equipment currents) dated 30 August, and then by channels 10, 20,30, 40, dated 03 September, which are now being transmitted.

A single AMSAT-UK bulletin dated 21 June, by Richard G3RWL has been transmitted. This featured Sputnik-1 40th anniversary, MIR frequencies, and RS-10 news, and the Keplerian elements for OSCAR-11.

Considerable interest is now being shown in the mode-S beacon, as operators prepare for Phase-3D. Reports indicate that it is a very weak signal, and therefore ideal for testing converters, once they have been set up using the much stronger signal from DOVE. Reports have indicated that the signal from OSCAR-11 is around 24 dB below that of DOVE. There are however considerable variations in the comparisons which vary between -15 dB and -36 dB! Before the beacon partially failed the signal was measured at -3 dB below DOVE.

Hans, HB9AQZ, reports hearing the beacon using a 26 turn helix, mounted in the shack, and pointing through a double glass window. Ib OZ1MY in Copenhagen heard the beacon with two 16 turn helixes, feeding an SSB down converter and pre-amp (combined noise figure 1.5 dB). Trevor, VK4AFL, reports S3 signals with a 60 cm dish, two turn helix feed, D.E.M converter and pre-amp. Victor, OE1VKW, reports S3-4 signals using a 67 element antenna, horizontal polarization, and UEK-2000 SAT. On the same equipment DOVE was received at S7-8. Thanks for all the reports.

The operating schedule is unchanged.

ASCII status (210 seconds)
ASCII bulletin (60 seconds)
BINARY SEU (30 seconds)
ASCII TLM (90 seconds)

```
        ASCII WOD (120 seconds)
        ASCII bulletin (60 seconds)
        BINARY ENG (30 seconds)

There  are  also  additional  status  blocks  after  each bulletin is
transmitted, and between ASCII TLM and WOD.

The mode-S beacon is ON, transmitting an unmodulated  carrier,  but
telemetry indicates that it has partially failed, and delivering half
power. Any reports of reception on 2401 MHz.  would be most welcome.
Please e-mail g3cwv@amsat.org.

The 435.025 MHz. beacon is normally OFF. However it can sometimes be
heard when the satellite is being commanded by ground control, ie.
within range of Guildford, UK.  When the 435 beacon is  transmitting,
the 145 beacon is normally OFF. The data transmitted is mainly
binary.

OSCAR-11 users are welcome to visit Clive's web site.  It contains some
software for capturing data, and decoding ASCII telemetry and WOD.
There is an archive of raw data (mainly WOD) for analysis, which is
continually being expanded, as new data is captured. The URL is -

      http://www.users.zetnet.co.uk/clivew/

[ANS thanks  Clive Wallis, G3CWV, for this information.]

AMSAT-OSCAR-16 (PACSAT)
(Uplink 145.9, 145.92, 145.94, 145.86 MHz FM, 1200 bps Manchester FSK
Downlink 437.0513 MHz SSB, 1200 bps RC-BPSK 1200 Baud PSK.
Beacon 2401.1428 MHz.)
Operating normally.
Below is a data  sample of  temperatures from the bird..
uptime is 1105/06:40:56.  Time is Sat Sep 27 12:07:36 1997
+X (RX) Temp          3.629 D  RX Temp               -5.448 D
Bat 1 Temp              3.024 D  Bat 2 Temp             1.814 D
Baseplt Temp           1.814 D  RC PSK BP Temp   0.603 D
RC PSK HPA Tmp   1.814 D  +Y Array Temp      -1.817 D
PSK TX HPA Tmp   0.603 D  +Z Array Temp      13.311 D

RC PSK TX Out    0.428 W
Total Array C= 0.244 Bat Ch Cur= 0.030 Ifb= 0.055 I+10V= 0.227
TX:010B BCR:83 PWRC:59E BT:3C WC:25 EDAC:9A
Graphic information about WOD/Telemetry values can be found at:
http://www.arrakis.es/~ea1bcu/wod.htm
[ANS thanks Miguel A. Menendez, EA1BCU, for this report.]

DO-17(DOVE)
( Downlink 145.825 MHz FM, 1200 Baud AFSK.
Beacon 2401.220 MHz.)
DOVE has returned to 2 meters.
Operational software has again been successfully loaded into DOVE (DO-17)
by the DOVE command team.  WD0E started the software at 09/17/97 19:40 UTC
and reports it seems to be running OK.  Reports on the condition of the
batteries for the next 24 hours would be appreciated.  Please send them to
wd0e@amsat.org.  Jim reports it remains to be seen how long the intermittent
watchdog timer in the satellite will allow this software to run.
The s-band transmitter is on to facilitate testing of s-band equipment on
the ground, particularly for those working toward P3D S capability.  Power
level on the 2 meter transmitter is about 1W day and night. Telemetry is
currently being sent every 60 seconds, but this could change due to power
management needs.
[ANS thanks Jim White, WD0E, for this update.]
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WEBERSAT (WO-18)
(Downlink 437.104 MHz SSB, 1200 Baud PSK AX.25.)
No report available.

LUSAT-OSCAR-19
(Uplink 1200 bps Manchester FSK Uplinks:
145.84, 145.86, 145.88, 145.9 MHz FM, Downlink 437.125 MHz SSB,
1200 bps RC-BPSK.)
Operating normally.
.Below is a data sample of the birds temperatures.
uptime is 829/22:04:56. Time is Sat Sep 27 12:10:06 1997
+X (RX) Temp -1.552 D RX Temp -0.991 D
Bat 1 Temp 1.252 D Bat 2 Temp 0.131 D
Baseplt Temp 0.131 D RC PSK BP Temp 4.618 D
RC PSK HPA Tmp 5.740 D +Y Array Temp -3.235 D
PSK TX HPA Tmp 3.496 D +Z Array Temp -2.113 D

RC PSK TX Out 0.986 W
Total Array C= 0.194 Bat Ch Cur= 0.010 Ifb= 0.057 I+10V= 0.170
TX:01A BCR:7E PWRC:36E BT:3C WC: 0
<To add 6,83 minutes to the clock of the satellite>
Graphic and general information about Telemetry values can be found at:
http://www.arrakis.es/~ea1bcu/lo19.htm
[ANS thanks Miguel A. Menendez, EA1BCU, for this report.]

UO-22:
(Uplink: 145.9 or 145.975 MHz FM. Downlink 435.120 MHz FM
9600 Baud FSK.)
UO-22 is operating normally.
Chris Jackson, G7UPN / ZL2TPO, has reloaded the Store and Forward
communications task on the UO-22 On-Board Computer. This task includes
incremental checksums which should make uploading slightly faster.
In the old task, once an upload was complete, the spacecraft had to
perform the checksum on the complete file. Depending on the file
length, this could take quite a long time. With the new task, the
checksum is computed on the fly - while the data is actually being
uploaded. Thus there is no need to recompute it at the end of the
transfer and this checksum delay is then removed.

However, all files that were started before Chris Jackson, G7UPN /
ZL2TPO, loaded the task around 1000 UTC on the 19th will receive a corrupt
body checksum error when the upload is completed. If the file is uploaded
again, it should be accepted. If trying to upload a large file that was
started before the above time, then start again.

If anyone gets persistent body checksum errors while uploading files to
UO-22 would they please let Chris Jackson know as soon as possible

[ANS thanks Chris Jackson, G7UPN / ZL2TPO,
Groundstation and Operations Manager, for this report.]

IO-26 (ITAMSAT)
Uplink 145.875, 145.9, 145.925, 145.95 MHz FM, Downlink 435.822 MHz SSB,
1200 Baud PSK.)
The actual beacon is:
26th September 1997 Happy birthday ITAMSAT!
Today IO-26 is 4 years old and all sub-systems are OK
Best wishes from the IT-AMSAT team
[ANS thanks Daniele, IK2XRO, and Piercarlo, IW2EGC,
ITMSAT Command Station for this report.]

[Please send your Satellite or News reports to ANS Editor B.J. Arts,
WT0N, via e-mail, at bjarts@the-bridge.net or to wt0n@amsat.org]

/EX
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